

Appl. No.: 10/539,780  
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Amdt. dated 07/28/2009

Amendments to the Claims:

1. (Previously Presented) A method, comprising:
  - establishing a radio channel candidate;
  - processing, by a controller, the radio channel candidate with potentially interfering signals using an interference cancellation technique and calculating a carrier to interference ratio for a selected carrier frequency of the radio channel candidate and the potentially interfering signals;
  - calculating, by the controller, at least one dominant interference ratio being the ratio of a signal level of a strongest potentially interfering signal with respect to a sum of signal levels of other potentially interfering signals;
  - using, by the controller, the dominant interference ratio to establish an indication as to an interference cancellation gain provided by the interference cancellation technique, the interference cancellation gain being used to establish a criteria for channel selection;
  - using, by the controller, the interference cancellation gain to modify the carrier to interference ratio; and
  - using, by the controller, a criteria based on the dominant interference ratio and on the modified carrier to interference ratio in a channel selection process for selecting a channel for the connection to be established.

2-4. (Cancelled).

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5. (Previously Presented) The method according to claim 1, wherein one of the criteria used in the channel selection process is a maximum value of a minimum difference between the calculated carrier to interference ratio and a target carrier to interference ratio.

6. (Previously Presented) The method according to claim 1, wherein one of the criteria used in the selection process is an average dominant interference ratio taken over a set of n connections which could be interfered with by the connection to be established.

7. (Previously Presented) The method according to claim 3, wherein the interference cancellation gain provided by the interference cancellation technique is established from the dominant interference ratio using a predefined function.

8. (Currently Amended) An apparatus, comprising:  
an establisher configured to establish a radio channel candidate;  
a first calculator configured to process the radio channel candidate with potentially interfering signals using an interference cancellation technique and to calculate a carrier to interference ratio based on a selected carrier frequency of the radio channel candidate and potentially interfering signals; and  
a second calculator configured to calculate a dominant interference ratio being a ratio of a signal level of a strongest potentially interfering signal with respect to a sum of the signal levels of other potentially interfering signals;  
an interference cancellation gain indicator configured to use the dominant interference ratio to establish an indication as to an interference cancellation gain provided by the interference

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cancellation technique, the interference cancellation gain being used to establish a criteria for channel selection;

a modifier configured to use the interference cancellation gain to modify the carrier to interference ratio; and

a selector configured to implement a selection process for selecting a channel for a connection to be established using criteria based on the dominant interference ratio and on the modified carrier to interference ratio.

9. (Currently Amended) The apparatus according to claim 15, further comprising:

an interference canceller configured to apply [[an]] the interference cancellation technique to the radio channel candidate and potentially interfering signals.

10. (Cancelled).

11. (Previously Presented) The apparatus according to claim 8, wherein the apparatus is configured to operate as part of a base station controller.

12. (Currently Amended) A system, comprising:

a plurality of stations, at least some of which comprise  
an establisher configured to establish a radio channel candidate[[],];  
a first calculator configured to process the radio channel candidate with potentially interfering signals using an interference cancellation technique and to calculate a carrier to interference ratio based on a selected carrier frequency of the radio channel candidate and potentially interfering signals;

a second calculator configured to calculate a dominant interference ratio being a ratio of a signal level of a strongest potentially interfering signal with respect to a sum of the signal levels of other potentially interfering signals;

an interference cancellation gain indicator configured to use the dominant interference ratio to establish an indication as to an interference cancellation gain provided by the interference cancellation technique, the interference cancellation gain being used to establish a criteria for channel selection;

a modifier configured to use the interference cancellation gain to modify the carrier to interference ratio; and

a selector configured to implement a selection process for selecting a channel for a connection to be established using criteria based on the dominant interference ratio and on the modified carrier to interference ratio.

13. (Previously Presented) The system according to claim 12, wherein the system comprises a cellular communication network.

14-15. (Cancelled).

16. (Currently Amended) An apparatus, comprising:

means for establishing a radio channel candidate;

means for processing the radio channel candidate with potentially interfering signals using an interference cancellation technique and calculating a carrier to interference ratio based on a selected carrier frequency of the radio channel candidate and potentially interfering signals;

means for calculating a dominant interference ratio being a ratio of a signal level of a strongest potentially interfering signal with respect to a sum of the signal levels of other potentially interfering signals;

means for using the dominant interference ratio to establish an indication as to an interference cancellation gain provided by the interference cancellation technique, the interference cancellation gain being used to establish a criteria for channel selection;

means for using the interference cancellation gain to modify the carrier to interference ratio; and

means for implementing a selection process for selecting a channel for a connection to be established using criteria based on the dominant interference ratio and on the modified carrier to interference ratio.

17. (Cancelled).

18. (Currently Amended) The apparatus according to claim [[17]] 16, further comprising:  
means for applying [[an]] the interference cancellation technique to the radio channel candidate and potentially interfering signals.

19. (Cancelled).

20. (Currently Amended) The apparatus according to claim 16, wherein the apparatus is configured to operate as part of a base station controller.

21. (Previously Presented) A computer program embodied on a computer-readable medium, the computer program configured to control a processor to perform operations comprising:

establishing a radio channel candidate;

processing the radio channel candidate with potentially interfering signals using an interference cancellation technique and calculating a carrier to interference ratio for a selected carrier frequency of the radio channel candidate and the potentially interfering signals;

calculating at least one dominant interference ratio being the ratio of a signal level of a strongest potentially interfering signal with respect to a sum of signal levels of other potentially interfering signals;

using the dominant interference ratio to establish an indication as to an interference cancellation gain provided by the interference cancellation technique, the interference cancellation gain being used to establish a criteria for channel selection;

using the interference cancellation gain to modify the carrier to interference ratio; and  
using a criteria based on the dominant interference ratio and on the modified carrier to interference ratio in a channel selection process for selecting a channel for the connection to be established.

22-25. (Cancelled).

26. (Previously Presented) The computer program according to claim 21, wherein one of the criteria used in the channel selection process is a maximum value of a minimum difference between the calculated carrier to interference ratio and a target carrier to interference ratio.

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27. (Previously Presented) The computer program according to claim 21, wherein one of the criteria used in the selection process is an average dominant interference ratio taken over a set of n connections which could be interfered with by the connection to be established.

28. (Previously Presented) The computer program according to claim 24, wherein the interference cancellation gain provided by the interference cancellation technique is established from the dominant interference ratio using a predefined function.